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Petroleum fuel: its use, procurement and distribution in the U.S. Navy.

Miller, Albert Stanley

University of Pittsburgh

PETROLEUM FUEL, ITS USE, PROCUREMENT AND DISTRIBUTION IN THE U. S. NAVY

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By

ALBERT STANLEY MILLER

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FOREWORD

This paper has been prepared to show how the U. S. Navy came to the exclusive use of petroleum fuel for all ships and to trace the development within the Department of Defense of an organization for the procurement and distribution of petroleum products.

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I. INTRODUCTION

It is a well known fact that the ships of the U. S. Navy obtain their propulsion power from petroleum products. Large ships use fuel oil, small ships and submarines use diesel oil. This fact did not occur suddenly but was a process of gradual evolution from the burning of coal. It is interesting to trace the steps in this gradual evolution and to see what obstacles had to be overcome by the early planners. There were many controversies but the many advantages offered by petroleum fuel overcame the objections of the "die-hards."

Prior to the development of air power, the Navy was always regarded, without question, as the nation's first line of defense. Certainly during the time of conversion from coal fuel to oil fuel the men in responsible positions felt that they should proceed most carefully due to the possible effect on national security. That security would be jeopardized if they converted the ships of the Navy to oil fuel and then found that the oil reserves of the U. S. were not sufficient to provide an adequate supply. Men of industry are frequently irked by the delay on the part of government officials in making decisions. In many cases the delay is not justified but in many others reasonable men in industry will realize the far-reaching consequences which will result and much investigation must precede the decision. It is hoped that this paper will indicate the thoroughness of investigation prior to complete conversion.

When the policy of petroleum fuel for ships was firmly established the problems of procurement and distribution were not difficult of solution prior to World War I. Nor were they very troublesome during that war. In the

peaceful period between World Wars I and II economy was the watchword, the armed services were cut down to a skeleton framework, and the procurement of fuel was a small detail in the Bureau of Supplies and Accounts of the Navy Department. With the outbreak of war between the U. S. and Japan the demand for fuel became tremendous and eventually led to the formation of a special organization to solve the problems of procurement and distribution of petroleum fuel not only for the forces of the U. S. but also for those of our Allies.

A brief history of the Army-Navy Petroleum Board, now known as the Munitions Board Petroleum Committee, should be of interest to members of the petroleum industry if only for the fact that it is now the most important agency of government which handles petroleum matters. On a lower echelon is the Armed Services Petroleum Purchasing Agency which is the single agency purchasing petroleum products for the Department of Defense. The organization and charter of this agency are provided for information.

It is the purpose of this paper, after tracing the development of the organization in government for the procurement and distribution of petroleum, to offer suggestions as to possible improvement in this organization.

II. HISTORY OF THE USE OF PETROLEUM AS FUEL FOR NAVAL VESSELS

A. Prior to 1900

The first known use of petroleum as fuel for water-borne power plants was in the craft operating in the Caspian Sea and on the Volga River. This was to be expected due to the Baku oil fields, the world's oldest, being in the vicinity and thus assuring power plants both afloat and ashore of a continuous supply of fuel.[1] The first oil-burning man-of-war was the torpedo-boat, SUNDERLAND, built in England. A complete account of her trials was set forth in "Engineering" issue of January 10, 1890, and it was stated that the oil-burning features were highly successful. However, nothing further was heard of the SUNDERLAND. The ship is not included in any Navy list from 1890 to 1900. It is presumed that either the ship was left in the hands of the builders or its name was changed. It is further presumed that the first accounts of the success of the oil-burning equipment were not well-founded.

Italy was the first nation to take the initiative in experimenting with some success with petroleum fuel for naval vessels. An unusual method was used in that the oil was sprayed over the hot coals in the furnace. A torpedo-boat was used for the experimental work in 1891. As a result of these experiments, eight torpedo-boats were thus equipped by 1895.[1]

The first recorded ocean voyage of a ship using only petroleum fuel was that of the BAKU STANDARD, which made a round trip between England and the

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[1] References at end of paper

U. S. in 1894. It is noted that steam atomization was used and the ship expended more water than oil during the trip.[1]

The U. S. Navy had long been interested in the possibility of petroleum fuel for its ships. A report by the Engineer-in-Chief in 1897 stated, "....from 1867 to the present time the Bureau has, at intervals, conducted experiments with various forms of apparatus and kinds of fuel oil...." The first definite official recommendation made by any naval official urging an actual seagoing oil-burning installation appeared in the report of the Engineer-in-Chief in 1888. It was not until seven years later, 1895, that it was recommended that experiments be conducted to determine the value of petroleum fuel for torpedo-boats and smaller types of vessels. In 1896, successful tests were made using oil fuel in a small torpedo-boat carried by the MAINE. In the same year, it was decided to put an oil-burning installation in the torpedo-boat named the TALBOT. War with Spain caused cancellation of this project and it was not until 1899 that the tests scheduled for the TALBOT were begun. Results were very discouraging. No more than three-fourths of full power could be developed and that only for a short time, and the smoke nuisance was as serious as when burning soft coal.

It must be remembered that the greatest hindrance to the assured development of oil-burning equipment and eventual installation in all ships was the uncertainty of the source of supply. The oil industry was in its infancy. Not much was known about how much oil the United States could produce and for how long. Even with plenty of oil available there was the large problem of distribution. Oil could not be obtained for naval ships in all ports of call.

So the Navy came to the end of the nineteenth century with very little having been done on the long road of complete conversion from coal to petroleum fuel.

B. 1900-1910

The turn of the century brought new information regarding the oil potential of the United States. The discovery of oil in the Spindletop field in 1901 lessened the fears of those who were concerned over the possible early exhaustion of our oil supplies. It also caused the oil industry to actively seek new customers for the large amount of oil flowing from new wells. If the industry could convince the Navy that oil would out-perform coal in actual boiler operation then it would gain a large customer and indirectly cause merchant fleet owners to convert to oil.

The Oil City Boiler Works erected a boiler in Washington and was anxious to have it tested for naval use. The Bureau of Engineering of the Navy was equally anxious to find a satisfactory water-tube boiler and, since the exhibitor paid the expenses, willingly set up a board to test the boiler. The report of the Navy Liquid Fuel Board[2] stands out as one of the world's finest engineering classics. Among other things, the report has been styled "the Bible on liquid fuel of the British Admiralty."[1] The Board functioned for two years (1902-1904) and the report contained thirty-three paragraphs of conclusions. Of these the first sentence of paragraph 31 is perhaps the most important: "31. The Board regards the engineering or mechanical feature of the liquid fuel problem as having been practically and satisfactorily solved..." However, in all actual experimentation work the Board utilized steam atomizers. The superiority of mechanical atomizers was recognized but no specific recommendation regarding them was made.

The fuel oil era in the Navy may be marked as having commenced in 1907. Contracts were let in that year for the construction of two battleships.

Contained in the specifications was the following paragraph, "Provision will be made for burning fuel oil in the furnaces."[3] The usual provisions for coal burning were also included meaning that the fuel oil was to be burned during auxiliary operation. One provision which upset the contractors was that mechanical atomizers were required. No atomizers of this type were available in the U. S. although three successful ones had been developed in foreign countries, one each in England, France and Germany. The Navy knew of these successes and desired to force the oil equipment manufacturers in this country into developing the mechanical atomizers. To use steam or air atomization would require either large evaporators to provide the water or heavy air compressors for the air supply.

At the end of this period, the Navy had a fairly well settled policy regarding fuel oil. The development of fuel oil as the sole fuel for destroyers had continued since 1899 and proved so successful that all destroyers built after 1907 were oil burning. And the policy for battleships was to use oil as an auxiliary fuel.

C. 1910-1917

The first oil-burning destroyer was commissioned in September, 1910. The success of the installation was apparent from the enthusiastic reports received. The battleships which had auxiliary oil-burning apparatus used it at every opportunity. The time was rapidly approaching when the final leap to oil fuel exclusively should be made. In the latter part of 1911, plans were laid down for the construction of two battleships, the OKLAHOMA and NEVADA. Although still not certain that all logistic problems could be solved, the Navy Department designed these ships for the exclusive use of fuel oil.

As the size and speed of capital ships increased, the engineers required more space, more weight, and more men for operating the power plant. By using oil fuel it was found that, in addition to the increased efficiency and radius of action, it was possible to return to the constructors one-fourth of the weight, one-fifth of the space, and release one-third of the men usually required for coal burning operations.

The old question of the amount of oil reserves in the U. S. continued to plague responsible officials. Now that capital ships were being built without features for coal burning, it became necessary to obtain the answer to the question, "Can enough oil be assured for a sufficient length of time to justify the Navy's adoption of fuel oil to the exclusion of coal?" The Secretary of the Navy asked this question of the Secretary of the Interior in 1912. He replied that the supply could be assured for the probable life of any ship built during the next ten years. As a result of this assurance, the Secretary of the Navy announced in his report for 1914 that in the future all fighting

ships built for the U. S. Navy would burn oil solely.

Once the firm policy of using fuel oil exclusively was established the next problem was that of distribution, to make certain that stocks of fuel oil were strategically located in sufficient amounts to serve the needs of the Fleet. This required the building of storage tanks, tankers, barges, and terminal facilities. And, since foreign navies closely paralleled the U. S. development of the use of oil for fuel, facilities were available for obtaining oil in foreign ports. The building program for distribution proceeded slowly but with sufficient speed to be able to furnish oil to the ships which were gradually coming off the ways.

One of the most troublesome and, at times, scandalous projects of the Navy at this time was the designation of certain public lands as Naval Oil Reserves. On August 8, 1912, Naval Petroleum Reserve No. 1 was designated as a portion of Elk Hills, California. On December 12, 1912, No. 2 was designated contiguous to No. 1 and located in the Buena Vista Hills. No. 3 was designated on April 30, 1915, and located south of the Salt Creek field in Wyoming. The objections of the oil industry to these withdrawals of public land from oil exploration and development resulted in much litigation. Manipulation of these lands by a later Secretary of the Interior caused the Teapot Dome scandal, (Reserve No. 3). All of these reserves were an effort on the part of the Navy Department to assure itself of an adequate supply of oil beyond the time limit set by the Secretary of the Interior in 1912.

As time went on and more ships, both naval and merchant, were built to burn oil exclusively, the question of continued supply was raised more and more frequently and finally brought to a head by a letter from the Engineer-in-Chief of the Navy to the Secretary of the Navy on April 15, 1916. The first two paragraphs of this letter are quoted on the following page to illustrate the thinking on the subject at that time and, particularly, to note what

the estimate of the petroleum reserves of the nation was in 1916.

> "1. The question of the supply of fuel oil for the fleet is of such great importance that the Bureau believes that it should be taken up and seriously studied at once in order that the necessary information may be had as to the cheapest fuel oil that may be used, the quantity and location of storage that should be provided, the methods that should be adopted for providing the current supply, and the plans that should be formulated and followed in order that the Navy may be assured of an adequate future supply and in order that the Navy Department may intelligently and safely continue its policy of building oil-burning vessels.
>
> 2. The Department of the Interior estimates that there remains in the oil fields of the nation a supply for only twenty-five years, and a recognized authority on this subject states:
>
> > 'In the exhaustion of its oil lands and with no assured source of domestic supply in sight, the United States is confronted with a national crisis of the first magnitude. ... We must either plan for the future or we must pass into a condition of commercial vassalage, in time of peace relying on some foreign country for the petroleum wherewith to lubricate the highways of commerce, in time of war at the mercy of the enemy who may either control the source of supply or the means of transportation.'"

The letter ended with a recommendation that a Board be appointed to study the problem. The "Board on the Supply of Fuel Oil for the Navy" was appointed on April 25, 1916.

The Board made an interim report on September 21, 1916 which carried only two recommendations:

1. That areas of the public domain containing oil shale deposits be set aside as naval reserves; and

2. That an additional naval petroleum reserve be set aside in the Osage Indian Reservation.

The final report of the Board was submitted on December 22, 1916 and contained many recommendations, but for the purpose of this paper only those of interest to the oil industry will be quoted.[1]

> "The supply of petroleum which the U. S. Geological Survey estimates to be contained in pools within the continental limits of the United States is twenty-eight times the present annual consumption."

Here, again, is a completely erroneous estimate but no doubt was the best that could be made with the information available at that time.

> "If we depend upon the domestic petroleum markets for our supply of fuel oil, the cost, already from two to three times that of coal in the Atlantic Ocean, will rapidly increase to a prohibitive figure, and in the near future the extent of this supply in time of war will not suffice for the needs of the fleet."

Fortunately this prognostication did not come to pass and, as is well known, the oil industry was able to reduce rather than increase the price of fuel oil.

> "The only method of insuring an adequate and dependable reserve of oil which will be available in time of war to the Navy is by holding in unassailable ownership reserves of United States lands with sufficient petroleum content."

This statement was probably dictated by the estimate of only 28 years' supply of petroleum.

> "A large portion of the cost of oil in the Atlantic is due to transportation. The cost of chartered transportation has always been at least twice that of transportation in naval tankers, and at present is six times as expensive."

The Navy needed tankers at this time and this statement was presented as justification for a building program. If Congress can be shown that by providing naval tankers money can be saved, then the chances of obtaining appropriations for this purpose are enhanced. The next quote proves this point.

> "The Board therefore urges the construction of naval tankers in numbers requisite for the needs of the fleet. In addition to those required in the Train, the Board recommends that there be completed by 1919 four naval tankers to carry oil from Gulf ports to the Atlantic seaboard."

Such action is usually protested by merchant shipping companies who stand to lose government revenues.

> "The Board recommends the construction of a topping plant on deep water in the lower Chesapeake, of a capacity to provide one-fifth the estimated consumption of the fleet in 1919. By purchasing crude oil at a Mexican port, transporting it in naval tankers, and removing the gasoline and kerosene, fuel oil

can be produced at a net cost less than one-third the present cost. The advisability of constructing this plant is suggested by the following considerations:

(a) The Navy as a large consumer needs an intimate knowledge of processes of refining, in order that it may control the cost and intelligently write specifications.

(b) Various grades of crude oil may be purchased as market conditions warrant, and converted into fuel oil, gasoline, and lubricants of the specific qualities best suited to naval use."

Here was the opening wedge for the government to go into the refining business. Had this recommendation been acted upon it was intended to go further into the oil business by drilling wells and building pipelines to this refinery. Fortunately, the government stayed out of the oil industry which proved itself capable of taking care of the Navy's needs as well as those of the civilian population.

Thus, the Navy came to the close of this period with a most complete and thorough report based on an investigation conducted by a board of officers, the two senior members of which had been active in advance of fuel oil since their service youth. The recommendations of this board were sweeping but they could have been followed had normal development not been interrupted by rapid war preparations and very shortly thereafter by hostilities.

III. PROCUREMENT

A. Prior to World War II

The amount of petroleum fuel required by the Navy increased each year after the decision was made to build ships equipped for burning oil exclusively. The problems of procurement and distribution mounted proportionately. But as oil requirements increased, coal requirements decreased and the Fuel Division of the Bureau of Supplies and Accounts was able to handle the situation. During World War I sufficient fuel was obtained and distributed to take care of the needs of the Fleet. However, at this time a new element began to grow in importance and that was the internal combustion engine. The passenger car, truck, tank and airplane all took on new importance and were used extensively with resultant large demands for fuel. Thus began the independent, non-related procurement methods of the Army and Navy to obtain their requirements of petroleum.

After World War I, the Navy settled down to peacetime operations and had little difficulty with procurement. The procedure would be as follows: The Chief of Naval Operations would determine what ship operations would be carried out during the coming year. The Bureau of Engineering would translate these movements into fuel requirements. These requirements would go to the Bureau of Supplies and Accounts, Fuel Division, where bids would be solicited, contracts let, and deliveries made where and when required during the year. It will be noted that this was a completely independent operation completed without reference to other government agencies.

During the 1930's another factor entered the problem of procurement. That was the growing importance of air power. Naval aviation was expanding

rapidly as carrier planes and operations were developed. The Army Air Corps increased just as rapidly. The result was competition between the two agencies for aviation gasoline. And because of differing ideas on specifications and use of this gasoline it could not be inter-changed between the services.

The situation in 1940 was such, with ample production capacity in the U. S., that neither government nor the armed services were much concerned for their petroleum supply. In fact, during Army maneuvers in the South at one time, both sides were being supplied with fuel from the same company with the same equipment and that was done right at the simulated front lines. The Navy was in a somewhat better position in that they had their own tankers, storage tanks and supply lines. Exercises had been conducted at fueling at sea with considerable success. These exercises paid off during World War II when it was necessary to keep ships at sea for months at a time.

So it would seem that the armed services approached World War II with a certain amount of complacency with regard to procurement and distribution of petroleum.

B. During World War II

The advent of World War II brought chaos to the procurement procedures of the armed forces. No longer could the Army and Navy operate on a "tank wagon" and "tank barge" basis, that is, call up the nearest oil company and order a few thousand gallons delivered at a given point by a certain hour of a day. No longer could they, or consumers in civilian life, or our Allies, buy competitively such products as they thought they needed and requisition such shipping facilities when and as they thought they needed, each without reference to what the other might be doing. The estimates of requirements to wage war were continually being revised upward but few men realized that eventually they would reach the staggering proportion of half the maintenance tonnage of our invasion forces. With such tremendous amounts of petroleum to handle, the procurement methods of the armed services bogged down early in the conflict.

Fortunately, two men entered the services of the government at this time, one in the Navy, F. S. Carter, and one in the Army, W. B. Pyron. Both had considerable experience in the oil industry, Carter with the New England Oil Co., then with Shell, and finally as an independent producer in the Southwest; Pyron with the J. M. Guffey Petroleum Co., then with Gulf. It was immediately apparent to these men that coordination of effort and cooperation of action were imperative if they were to bring order out of chaos. As a result of their efforts the Army-Navy Petroleum Board was created by order of the Commanding General of the Army Service Forces and the Vice Chief of Naval Operations on July 14, 1942. The Board's first instructions were, "to coordinate the efforts of the services in all petroleum matters." It was soon found

necessary to increase the strength of this agency, so it was designated a sub-division of the Joint Chiefs of Staff in January of 1943.

As set up and operating during the war, the A-NPB was to perform the following functions:

> "1. The Board is to bring about close cooperation between the War and Navy Departments, while maintaining close liaison with the Petroleum Administration for War:
>
> 2. The Board is responsible for gathering and preparing full information on petroleum products for the War and Navy Departments:
>
> 3. The Board determines and consolidates the requirements of petroleum for Army and Navy; determines the capacity of the oil industry to provide those requirements, in collaboration with PAW; determines and designates for each petroleum product the appropriate procurement agency or agencies for both services, and makes certain the full coordination of such procurement, overseas shipment and storage of all such products:
>
> 4. The Board has to see that the necessary petroleum products are at the designated delivery points at the specified time:
>
> 5. The Board represents the Joint Chiefs of Staff, on all petroleum matters with other Allied Nations."[5]

Carter and Pyron soon brought into the armed forces additional men of experience in the oil industry. Soon a world wide organization was functioning efficiently to procure and distribute petroleum to the free world.

The cornerstone of operations of the Board rested on the operations of the Area Petroleum Officers. These representatives of the Board were stationed in the five theaters of war; North Africa and the Mediterranean, North European, India-Burma, Pacific, and Latin American. It was the duty of these officers to estimate the requirements of their theaters for four months in advance with monthly corrections to bring the estimates up-to-date. And these reports were not mailed back to Washington, they were carried back personally by a representative of the APO who would be on hand to explain any item not quite fully understood by the Board. The record speaks for itself of the success of this splendid organization which resulted from the efforts

of two outstanding men of the oil industry.

At the end of World War II, Washington, D. C. was the oil center of the world, primarily because the armies, navies, and air forces of the United Nations were being supplied from that city by means of the Army-Navy Petroleum Board. As peace came to the world once more, those in responsible positions moved to strengthen and perfect this organization so that, should war come to this nation again, the chaos which occurred at the beginning of World War II would not be repeated.

C. After World War II

Procurement of petroleum for the Navy was consolidated with the requirements of all other government agencies during World War II as a result of the establishment of the Army-Navy Petroleum Board. This was proved to be the proper procedure. However, with the advent of peace many of the men of the oil industry who held key positions on the Board were anxious to return to civilian life and rightly so. But their places could not be taken by career line officers because neither service had the men with sufficient experience. In addition, one of the most important functions of the A-NPB was close liaison with the Petroleum Administration for War functioning under the Department of the Interior. A few words regarding its demise are in order at this time.

The President, on May 3, 1946, wrote a letter to the Secretary of the Interior and, because it is the basis for the action which followed, the first four paragraphs are quoted below:

"Mr. Dear Mr. Secretary:

In keeping with the Administration's policy of winding up the affairs of war agencies as quickly as possible after their emergency responsibilities have been discharged, I have acted upon your recommendation to terminate, effective May 8, the Petroleum Administration for War, which has so successfully completed its wartime assignment.

I am in agreement with your views that steps should now be taken to assure coordination in peacetime of the Federal Government's many interests in petroleum, petroleum products and associated hydrocarbons.

To the extent possible one agency must bear the primary responsibility for providing a focal point for leadership and information for the numerous agencies of the Federal Government dealing with petroleum. I, therefore, request that you undertake the initiative in obtaining coordination and unification of Federal policy and administration with respect to the functions

and activities relating to petroleum carried on by the various departments and agencies. Where practicable, and appropriate, governmental activities relating to petroleum should be centralized and I ask that from time to time you submit to me, for consideration, proposals looking to the accomplishment of this objective.

You should, through such office as you designate, serve as the channel of communication between the Federal Government and the petroleum industry, and as the liaison agency of the Federal Government in its relation with appropriate State bodies concerned with Oil and Gas. I have been impressed with the great contribution of government-industry cooperation to the success of the war petroleum program, and feel that the values of such close and harmonious relations between Government and industry should be continued. I, therefore, suggest that you establish an industry organization to consult and advise with you."

The Secretary of the Interior took prompt action. On May 6, 1946, the Oil and Gas Division of the Department of the Interior was established to carry out the suggestions of the President. However, the civilian consultant suggestion of the President was not carried out until March 29, 1947, when the Military Petroleum Advisory Committee was established and the introductory paragraph of that order is quoted below:

"Pursuant to the President's letter of May 3, 1946, to the Secretary of the Interior, there is hereby established a Military Petroleum Advisory Committee, to consist of representative members of the petroleum industry appointed to membership by the Secretary of the Interior, to provide the Chairman of the Army-Navy Petroleum Board and the Director of the Oil and Gas Division with expert counsel, advice, and information on all oil and gas matters relating to national security and defense which may be properly brought before the Committee."

On October 7, 1948, the name of this Committee was changed to the "Military Petroleum Advisory Board" and certain additional duties were assigned to it. Its position in the National Organization for Petroleum is indicated on the chart, Appendix I.

Shortly after the outbreak of hostilities in Korea, the Petroleum Administration for Defense was set up in the Department of the Interior and is now functioning in much the same manner as the Petroleum Administration for War did during World War II.

The Army-Navy Petroleum Board as established in 1942 was reconstituted the Armed Services Petroleum Board by Secretary of Defense Forrestal in February, 1948, as a board to operate jointly under the Departments of the Army, Navy, and Air Force which had previously been set up under the National Security Act of 1947. This Board was responsible to the Secretaries of the Army, Navy, and Air Force for petroleum matters, and also, to a certain extent, to the Munitions Board, the Joint Chiefs of Staff, and the Research and Development Board. It may be readily seen that with so many "bosses" the Board would not function smoothly and reorganization would be required. It was not long in coming. On May 3, 1949, the Secretary of Defense directed that the Board be transferred to the Munitions Board and renamed the "Munitions Board Petroleum Committee." That is the organization we have today and its charter is appended in Appendix II.

IV. PRESENT PROCEDURE FOR PROCUREMENT

A. The Armed Services Petroleum Purchasing Agency

1. Origin

Previous discussion in this paper has dealt with the organization on a high level which determines requirements and distribution of petroleum products for the use of the Armed Services. The organization on a lower level which does the actual purchasing is the Armed Services Petroleum Purchasing Agency hereinafter referred to as ASPPA.

Prior to and during World War II, each department purchased its own requirements in petroleum products. This procedure had the advantage of direct control and perhaps leads to more care in determining requirements. It had the disadvantages, however, of leading, in some instances, to competition between Departments for products, as well as duplication of effort. To remove these disadvantages and, in addition, to give industry one agency to contact relative to military purchase requirements in petroleum, ASPPA was established. This agency has the dual mission of contracting for the military needs in petroleum and also to a certain extent arranging for and co-ordinating their distribution. Personnel for the Agency came from the petroleum purchasing sections of the three Departments and officially began operating on May 1, 1948. Authorized strength is nine officers and 73 civilians. The organization chart and charter are appended as Appendix III and IV.

2. Procedure

The requirements of each Department for the fiscal year are obtained by April of the preceding year. Contracts are made usually on a six months basis. Normally, awards are made to suppliers in December and June of each year. In many cases lack of storage space makes it necessary to accept delivery

in comparatively small amounts and the government must depend on industry to carry in its distribution system the stocks necessary to provide a smooth uninterrupted flow of products.

Procurement methods vary with conditions. When petroleum products were in short supply three years ago virtually all procurement was as a result of negotiation. When the supply is adequate, procurement, for the most part, results from formal advertisement.

V. CONCLUSIONS

One conclusion which may be drawn from the foregoing discussion is that in the technological development of oil burning equipment, the U. S. Navy and the equipment industry cooperated very closely. Both parties were intensely interested in building up the use of petroleum as fuel for ships; industry, because of business reasons, and the Navy, in order to increase the effectiveness of its fighting units. It is fortunate for this country that responsible men in business and government have been endowed with the ability and aggressiveness which caused them to continually seek new and better methods of technical accomplishment. By so doing, they have brought this country to its present high standard of living, and the armed forces to their present great strength.

The great demand for petroleum during World War II could have been cause for the government to take over the petroleum industry as it did the railroads during World War I. That this event did not come to pass is due to men of the industry who entered the armed services and saw to it that oil was delivered in the right amount of the right kind, at the right place at the right time. They did this by avoiding clashes of personalities and cutting red tape to the minimum. This outstanding example of close integration of government and industry shows that a large task can be accomplished in this manner harmoniously and efficiently.

The present organization for the handling of petroleum in government can prove its efficiency only when put to the test should a major war descend upon us again. If that happens, there is no doubt that men of the oil industry will once again take their places in the organization to provide the

necessary smooth flow of oil. In the meantime the Army and Navy will train a small number of officers to act as a nucleus around which the larger organization will be built when required.

An inspection of the chart of the "National Organization For Petroleum", Appendix I, reveals a rather complex set-up. Perhaps the very nature of a large bureaucracy requires such complexity. However, during World War II the organization was much more simple and functioned efficiently. The Army-Navy Petroleum Board came directly under the Joint Chiefs of Staff. At present, this Board has become the Munitions Board Petroleum Committee and is responsible to TWO agencies, the Munitions Board and the Secretary of Defense. The question arises as to why, when the country had a winning combination which proved itself in World War II, the organization was changed? One of the objects of unification of the Armed Services was to simplify the organization, yet it is obvious in this example that a subordinate part of the Defense Department became much more complicated. No doubt there were good reasons for each step in the evolution of the present organization for petroleum administration, but it seems to have become much more cumbersome than was the original intention.

Again referring to Appendix I, it will be noted that there are five agencies under the President which handle, in some manner, matters pertaining to petroleum. This seems to be a wide spread of personnel and provides the possibility of duplication of effort. Two possible solutions are offered which might lead to simplification: (1) Combine the various sub-agencies under one existing Department; or (2) Create a new Department under the President which will handle all petroleum matters for the Government.

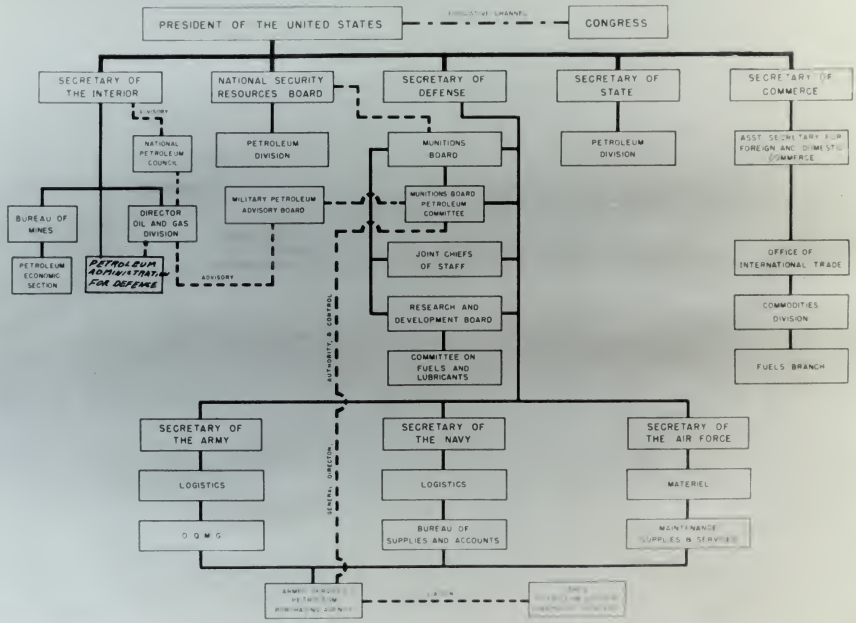
(1) The Department under which it seems logical to combine all petroleum sub-agencies is the Department of the Interior. This Department now has under it the Bureau of Mines and the Petroleum Administration for Defense (PAD). These two agencies could be used as a nucleus to form a Bureau of Petroleum,

i.e., the Petroleum section of the Bureau of Mines combined with the FAD. All petroleum agencies of other Departments would then be integrated into this new Bureau. In this manner, one Department would be responsible for procurement and distribution of petroleum products for all other Departments.

(2) The creation of a new Department under the President might be justified by the increasing importance of petroleum in the economic life of the nation. International crises frequently arise on the subject of petroleum as exemplified at the present time by the Iranian oil situation. Until the time when new power sources are developed, such as atomic power, future wars will be won by the country possessing the greatest amount of oil and the technical knowledge for its use. The concentration of all petroleum experts now in government in one Department could lead to more accurate decisions and faster action on petroleum problems which may arise.

The above suggestions may seem radical to those now in government, but to industry it would be a welcome relief to have but one agency with which to negotiate any dealings pertaining to petroleum.

NATIONAL ORGANIZATION FOR PETROLEUM



APPENDIX II

DEPARTMENT OF DEFENSE
MUNITIONS BOARD
WASHINGTON 25, D. C.

MB Order No. 51-8/2 3 January 1951

SUBJECT: Charter for Munitions Board Joint Petroleum Committee

1. Establishment. With the concurrence of the Munitions Board and with the approval of the Secretary of Defense, the Munitions Board Joint Petroleum Committee is hereby re-established with membership and duties as herein defined.

2. Membership. The Committee will consist of seven members, one from each of the military departments, designated by the respective member of the Munitions Board; the three departmental members of the Armed Services Petroleum Purchasing Agency; and one member from the Munitions Board staff, designated by the Director of the Staff.

3. Chairman. Insofar as practicable, the Munitions Board member on the Committee will be appointed Chairman. In the absence of such representative, the Director of the Staff of the Munitions Board may designate one of the members to serve as Acting Chairman of the Committee.

4. Staff. The MB Petroleum Division will serve as a permanent staff and working group for the MB Joint Petroleum Committee. The MB Petroleum Division will be headed by a Chief, of General or Flag rank. The Chief will be responsible for administering the affairs of the Committee, and presenting problems and recommendations to the Committee. He will be assisted by two Deputy Chiefs, one each from the other two departments. The Petroleum Division will consist of such civilian and military personnel as are authorized to carry out the program of the Committee.

5. Duties. The duties of the Joint Petroleum Committee will include the following with respect to petroleum matters:

a. Prepare for the Munitions Board plans governing the military aspects of industrial mobilization on petroleum for a future emergency.

b. Prepare for the Joint Chiefs of Staff or the Munitions Board evaluations of the petroleum feasibility of strategic or logistic plans, based upon current estimates of potential production, procurement, and transportation capabilities maintained by the Joint Petroleum Committee.

c. Analyze and review for the appropriate authorities, as directed, both current and mobilization programs for military requirements for petroleum as submitted by the Services. In connection with such requirements: Develop, in coordination with the Office of Requirements and Controls, detailed policies, procedures and standards for their computation and presentation; initiate requests upon the departments for such requirements and transmit them through the Office of Requirements and Controls; review such requirements in detail for mathematical correctness and conformance to instructions, translation into production objectives and determinations of feasibility, and conduct preliminary production scheduling for such requirements.

d. Coordinate for the Munitions Board policies and programs for the use or disposal by the military departments of petroleum plants and facilities, and for the maintenance of an adequate industrial reserve of petroleum facilities.

e. Conduct or review studies on those phases of industrial security concerned with petroleum facilities.

f. Advise the Munitions Board with respect to foreign trade and related matters which concern petroleum.

g. Prepare estimates of the petroleum capabilities for war of foreign nations.

h. Furnish Department of Defense representation on departmental committees outside the Department of Defense on petroleum, and represent the Department of Defense in its relationships with the Military Petroleum Advisory Board.

i. Advise the Muntions Board on coordination of specifications and standardization of petroleum items.

j. Prepare such studies and perform such duties and functions in connection with petroleum matters as may be requested by the Secretary of Defense, the Joint Chiefs of Staff, the Munitions Board, the Research and Development Board, or the Secretaries of the Army, Navy, and Air Force.

k. Advise the Joint Chiefs of Staff, the Munitions Board, the Research and Development Board, the Armed Services Petroleum Purchasing Agency, and the Secretaries of the Army, Navy, and Air Force, on petroleum policy matters, including comments and recommendations on petroleum legislation.

l. Exercise general direction, authority, and control over the Armed Services Petroleum Purchasing Agency.

6. Contacts and Relationships.

a. The Committee will report to the Chairman of the Munitions Board through the Director of Production Management. The Committee will submit recommendations and reports to the Director of Production Management on problems assigned to it by that Director, and will keep him informed of current activities and progress on projects. The Committee may submit on its own initiative recommendations to the Director of Production Management on problems which fall within the scope of its responsibility.

b. The Committee is authorized direct contact with other agencies as required to fulfill its responsibilities; and may call upon any department or agency of the Department of Defense for such information and assistance as may be required. Similarly, the agencies referred to in paragraphs f. j and k are authorized direct contact with the Committee. In carrying out work for any of these agencies, the Committee will take necessary action to insure that matters of concern to other agencies are properly coordinated with these agencies. The Committee will take advantage of work already accomplished in the petroleum field. Munitions Board Offices having petroleum problems will present such problems and requests for study to the Joint Petroleum Committee and will not duplicate functions of the Committee.

7. Security. Each military department will certify in its letters appointing members or replacements to the Committee and Petroleum Division that the appointee has security clearance for TOP SECRET information.

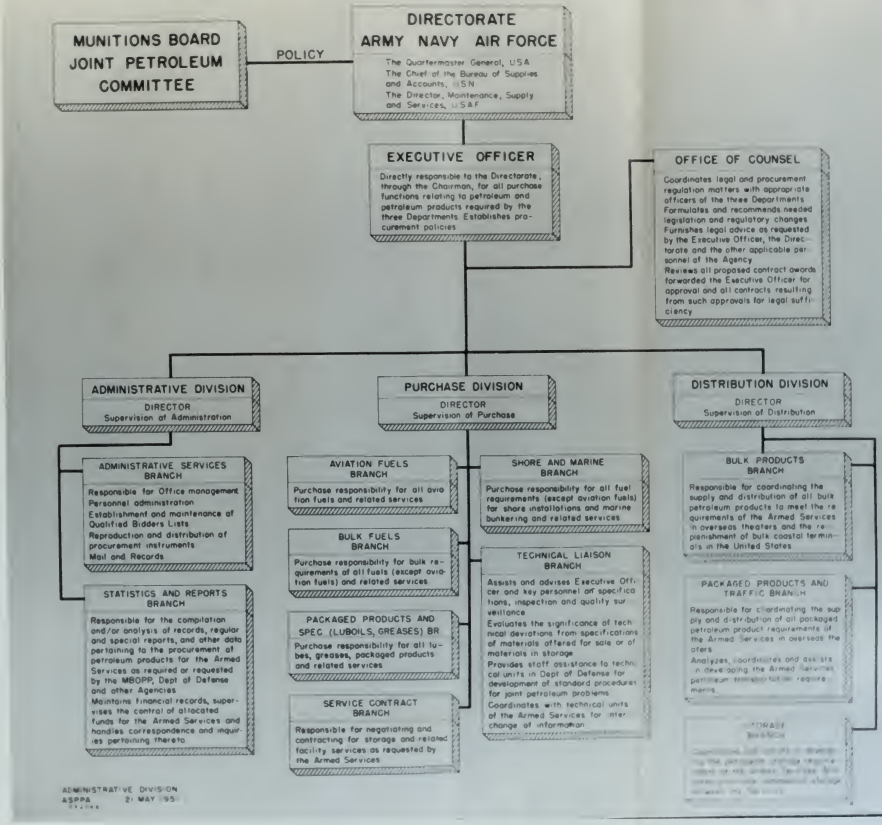
8. Committee Procedures. The Committee will follow standard procedures for operation of joint committees, except for such provisions as are inconsistent herewith.

9. This order rescinds and is substituted for that part of Section 1637, MB Order 51-8, dated 1 September 1950, which is entitled "MB Joint Petroleum Committee."

/s/
DONALD E. KIDSTON
Administrative Officer
Munitions Board

APPENDIX III

ARMED SERVICES PETROLEUM PURCHASING AGENCY



APPENDIX IV

CHARTER FOR
THE ARMED SERVICES PETROLEUM PURCHASING AGENCY

1. An Armed Services Petroleum Purchasing Agency is hereby established as a joint agency of the Departments of the Army, the Navy, and the Air Force, and shall be responsible for all purchase functions relating to petroleum, and petroleum products, hereinafter referred to as petroleum items, and such other items as may be assigned from time to time.

2. The Petroleum Purchasing Agency shall consist of the Quartermaster General of the Army, the Chief of the Bureau of Supplies and Accounts of the Navy, and the Director of Maintenance Supplies and Services of the U. S. Air Force, each of whom shall serve successively as Chairman for a two-year term.

3. The Petroleum Purchasing Agency shall select from the three services in rotation an executive officer who shall serve for a term of two years unless relieved of duty at the discretion of the Petroleum Purchasing Agency. The executive officer of the Petroleum Purchasing Agency, under the direction of the Agency, shall supervise its personnel, records and facilities, sign and execute for and in the name of the Agency correspondence reports, determinations, contracts and orders and all other necessary papers, and shall in general, conduct the business of the Agency and perform such other services as may be assigned by the Agency. The authority of the executive officer may be delegated to personnel of the Agency.

4. The budgetary, staff, space and facilities requirements of the Agency shall be met by the departments of the Army, Navy and Air Force on such basis as may be agreed upon between them.

5. The Petroleum Purchasing Agency, within the limits of allotments of appropriations made available for such purpose by each of the Departments of the Army, Navy and Air Force and in accordance with requirements established by the Departments and priorities established for each department by the Petroleum Board under the guidance of the Joint Chiefs of Staff, shall have the responsibility for the purchase of petroleum items for each department, and for such purpose shall consolidate the established requirements of the three departments; shall solicit and analyze bids, negotiate, award, execute and administer contracts, including claims thereunder; shall make determinations required therefor; shall obtain all necessary clearances in connection therewith; shall maintain records thereof; shall supervise the performance of contracts and for this purpose shall arrange for inspections and utilize such laboratory and inspection facilities and services of the departments as may be made available therefor; shall consolidate transportation requirements and arrange for delivery to storage and use installations through the appropriate office of the Department involved in transportation, without, however, having any responsibility for operational control of transportation facilities; shall coordinate joint bulk storage by the three departments; and shall certify vouchers for payment by the disbursing officers of the three departments.

6. The Petroleum Purchasing Agency shall establish its own purchase and contract forms, subject to the approval of the Munitions Board. It shall also establish its own policies, procedures and regulations, in accordance with applicable limitations of law and wherever practicable in conformity with established policies, procedures and regulations.

7. The Petroleum Purchasing Agency shall advise the three Departments with reference to the scheduling of their petroleum item requirements.

8. The Petroleum Purchasing Agency shall render such information, reports and recommendations as may be requested or desirable to cognizant agencies in the National Military Establishment in connection with matters arising in the course of procurement of petroleum items, such as short supply, changes in specifications and procurement regulations, practices and forms, improvements in storage, distribution and transportation facilities, and imbalances between purchases, transportation and storage.

9. The responsibility for the administration of pending procurement of petroleum items heretofore initiated by the service or by the Joint Army-Navy Petroleum Purchasing Agency is hereby transferred to the Petroleum Purchasing Agency.

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B. Related References not Cited

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7. Files of the Armed Services Petroleum Purchasing Agency

8. Files of the Navy Department

9. Hamilton, J.K., Lieutenant, U.S.N., "A Short History of the Naval Use of Fuel Oil," Part II, Journal of the American Society of Naval Engineers, November, 1933.